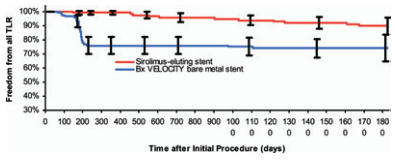
Inside This Issue of JACC

October 2, 2007, Volume 50, No. 14



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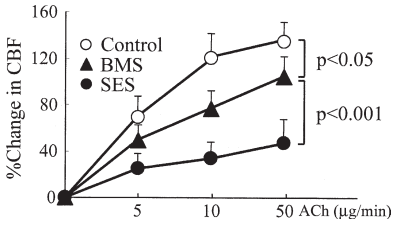
Interventional Cardiology

Benefits of SES Maintained at 5 Years

Morice and colleagues report 5-year clinical outcomes from RAVEL (A Randomized Comparison of a Sirolimus-Eluting Stent With a Standard Stent for Coronary Revascularization), the first trial that randomized subjects to either bare-metal stents (BMS) or sirolimus-eluting stents (SES). The percentage of subjects free from target lesion revascularization (TLR) at 5 years was 90% in subjects randomized to SES versus 74% in those assigned to BMS. The rate of major adverse cardiac events, including death, myocardial infarction, and TLR, was 26% in patients treated with SES compared to 35% in patients treated with BMS; there was no increased risk of stent thrombosis in the SES arm. This study confirms that SES effectively prevents neointimal formation, rather than merely delaying its onset. **See page 1299. See figure.**



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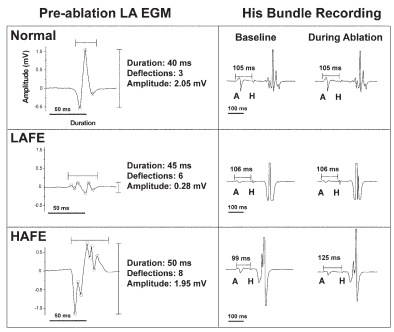
Interventional Cardiology

SES May Cause Endothelial Dysfunction

This study examined whether sirolimus-eluting stent (SES) implantation affects endothelial function. Patients treated with either bare-metal stent (BMS) or SES for acute anterior myocardial infarction underwent repeat coronary angiography 2 weeks later, during which endothelial-derived vasodilation was measured. The concentration of sirolimus and vascular endothelial growth factor (VEGF) were also measured in the anterior interventricular vein (AIV). In SES patients, the left anterior descending coronary artery constricted more severely and the change in blood flow was less after acetylcholine (ACh) than in the BMS group. The VEGF levels in the AIV were also significantly lower than in the SES group. This suggests that SES implantation may adversely affect endothelium-dependent vasomotor function and inhibit myocardial VEGF secretion. **See page 1305. See figure.**



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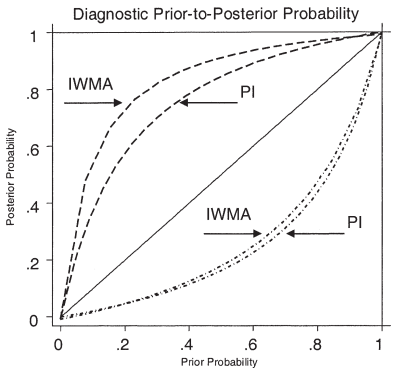
Heart Rhythm Disorders

Clues to AF Mechanism From Atrial EGMs

Lellouche and colleagues studied atrial electrograms (EGMs) from several different sites in the left atrium. Electrographic characteristics (number of deflections, amplitude, and duration) were measured in sinus rhythm, and evidence of parasympathetic stimulation from radiofrequency application was assessed at all sites. A specific pattern of sinus rhythm EGMs (deflections >4, amplitude >0.7 mV, and duration >40 ms) predicted parasympathetic responses in that area. Parasympathetic activation during atrial fibrillation (AF) ablation occurs in areas of the left atrium with high-amplitude fractionated EGMs during sinus rhythm; further studies are needed to determine if targeting these areas improves the efficacy of AF ablations. **See page 1324. See figure.**



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Cardiac Imaging

Meta-Analysis of Stress Cardiac MRI

Stress cardiac magnetic resonance imaging (MRI) has recently emerged as a noninvasive method in the detection of coronary artery disease (CAD), with 2 main techniques in use: perfusion imaging and stress-induced wall motion abnormalities. Nandalur and colleagues performed a meta-analysis of 37 studies with over 2,000 patients that compared stress cardiac MRI with coronary angiography. The sensitivity and specificity of stress-induced wall motion abnormalities were 0.83 and 0.86, respectively; for perfusion imaging they were 0.91 and 0.81, respectively. The authors conclude that in populations with relatively high disease prevalence, stress cardiac MRI, using either perfusion imaging or stress-induced wall motion abnormalities, provides sensitivity and specificity for the diagnosis of CAD comparable to single-photon emission tomography and echocardiography. **See page 1343. See figure.**